

7. Cerebro-Spinal Meningitis, or "The Brain Fever" of 1857. By J. V. KENDALL, M. D., of Clay, Onondaga county.

It is no uncommon event for a particular form of disease to obtain a name from its locality, its origin, its peculiar characteristics or phenomena, without any reference to its pathology. For instance, a disease prevailed in the northern section of this State in the winter and spring of 1843-44—evidently a malignant erysipelas—called the "black tongue," which in many instances affected not only the external facial organs, but implicated the tongue, and other parts. Hence the name became common both among the people and physicians.

The ship fever, without doubt an imported typhus from Ireland, derived its name from its origin and prevalence on ships crowded and badly ventilated, though it extended, by infection, in some instances, hundreds of miles from the sea-board.

The "spotted fever," in the early part of the present century, evidently derived its name from its characteristic spots, or discolorations which appeared upon the surface of the person afflicted with the disease.

In the same sense, in this paper, we propose to make a few references to a disease which has prevailed more or less extensively during the past winter, in Onondaga and some other counties, under the sobriquet of "brain fever."

Less reference will be had to the pathology of the disease than to its general symptoms. And while the latter will be detailed, together with some cases which fell under my observation, in the northern part of Onondaga county, every member present of this Society will draw his own inferences respecting

its pathology. In this connection it may be necessary to beg the indulgence of the Society if the picture should be somewhat imperfect; as I am obliged, for want of notes taken at the time, to depend upon the memory, except such aids as can be gleaned from my day-book, in which, by the way, I often give an epitome of my daily treatment, as well as occasionally insert a note of any peculiarity in the disease.

As early as September, 1856, I was led to observe that the type of fever was being modified; that though it still manifested a remitting character, it nevertheless showed a great tenacity to any subject it took hold of, instead of yielding readily, as intermitting or remitting fever usually does. And that our great anti-malarious remedy—quinine—even where there were distinct remissions in the disease, failed to accomplish its usual results. But not till quite the last of the year did the disease assume a particularly dangerous character; nor did it manifest its full malignancy in the form of disease called “brain fever,” till the early part of January, 1857. Its invasion was then sudden, and rapidly extending, it strongly partook of an endemic character.

The first case I was called to see which was distinctly of this character, proved fatal in seventeen hours from my first visit, and indeed within about thirty-five hours from the attack. In the course of two weeks from this time, some dozen or more were attacked, some of which proved rapidly fatal; others lingered several weeks, and some even months, and then died; while others still recovered, some rapidly, and a larger number slowly.

For nine or ten weeks the disease appeared pretty much unchanged, after which, with the exception of a solitary case in May, it appeared milder in its character, and though at the first attack the disease still seemed violent, in a large number of cases after four to six days, they rapidly recovered, or passed into that state usually denominated “typhoid,” in which they linger long and slowly recover, or the system wears out and the patient dies.

In a large number of cases, there are premonitory symptoms of some hours' duration—a feeling of languor, restlessness, *malaise*, commonly called; but hardly enough to attract observation, as there is nothing, thus far, but what is common to people from exposure to cold, or many other causes. Following this state is a chill, not severe, but lasting several hours, accompanied or followed by a violent pain in the head, usually described by the patient as being felt completely through the head, from the region of the temples to the occiput. A violent pain also generally extends down the neck, or perhaps the whole length of the spine, and indeed in some cases seems to be universal. After a short time, perhaps some hours from the commencement of the pain in the head, retching and vomiting are added to the catalogue of unpleasant symptoms, in many cases very frequent and distressing, in others occurring only occasionally. After an indefinite period, commonly between twelve and forty-eight hours, these unpleasant symptoms lull, the patient becomes easier; frequently there is a feeling of softening to the skin, an apparent quietude, and a general favorable appearance, as if the fever were ephemeral and health would soon be enjoyed. From this stand-point many have rapidly and surprisingly recovered, while a larger share have passed into a state which will be soon described.

But to return to the period of pain in the head, vomiting, &c., there is generally much aberration of the mental faculties. Some are merely confused, talking perhaps at random, but answering questions rationally, but with apparent effort and in monosyllables, plainly manifesting that it requires great effort to concentrate the mind sufficiently to answer at all. Others are wildly delirious, raving, talking much, tossing themselves upon the bed, and even requiring the aid of one or more persons to keep them upon it, and from doing themselves physical injury. Others again, lie in a torpid state, the head drawn back upon the *nuchæ*, from whom you can gain no reply, and sometimes no recognition of understanding; at others, manifesting a vague comprehension, without mental or physical force to comply with any requirement.



In the latter case the eye is closed, or if opened has a dim, unmeaning look; and in nearly all the cases, the pupil is moderately dilated; in a few, slightly contracted or perhaps of natural size.

Sometimes as early as the second day, but later, if not a very severe case, petechial spots appear, first upon the face, neck and breast, and extending more or less over the whole surface. These spots are very various in their appearance. In size they are from a mere point to three or six lines in diameter, and even larger in some instances. In color, from a scarlet to a dark purple—I had almost said black. In frequency, from a few scattering spots to one-fourth of the whole of the cutaneous surface. Where they are few and scattered, they are more generally of a scarlet or rose-red color; when more abundant and larger, of a darker hue. These remain upon the surface but a few days if the patient lives, gradually fading, and in a week they are all gone. If the patient continues to sink, the petechiæ continue, and continually grow darker till death.

Probably a majority have no petechiæ at all, at least not discernable by the naked eye; even some of a fatal character have not exhibited them.

The urine is secreted in moderate quantity, but the bladder is insensible to its presence, requiring in some cases artificial aid to discharge the secretion. Its appearance is various. Having applied no chemical tests I can consequently speak of it only as it appears to the eye. Generally it is dark and riley—a thick sediment at the bottom after standing awhile. Sometimes dark as brandy, without sediment. After the disease has continued some time, the urine becomes clear and of light complexion. It may continue thus for some days, and again assume a muddy appearance.

The bowels are remarkably torpid, even resisting the action of large doses of active cathartics.

The tongue, in the early stages of the disease, is somewhat furred, with a thin whitish or a thicker, more yellow coating; sometimes, but seldom, red and dry—more generally moist. At

a late stage the tongue is occasionally dry, but oftener red and moist; while in many cases, and for many days, it is not only moist but has the appearance of health. Indeed I have seen many a tongue look worse when the person would partake freely of hearty food. In fact I can safely say that I never before saw any case of serious disease seated upon the system generally, or upon any portion of the organism, without a greater aberration from the normal condition of this organ.

The symptoms now being detailed are those that predominate in those cases which pass the first four to seven days without recovery or a fatal termination. From this time also the bowels continue torpid, so much so that aperients have no effect, moderate cathartics are but little more effectual, and large doses of calomel and the active purgatives are required to act upon the bowels. Some cases—a small proportion of the whole number—have mild diarrhœa. In one case only which occurred under my observation, was this symptom troublesome; in which case the discharges were described as containing purulent matter, or “canker” as it was called. This therefore is an exception to the general rule.

The pulse in these cases is peculiar; but the peculiarity is more easily apprehended by the sense of touch than described by the use of the pen. Every physician is aware of the possession of a knowledge of the pulse, which he has gained by experience, highly valuable to him, but indescribable to others.

We may remark, however, that the pulse in the most violent cases, in a very short time from the attack, is feeble, fluttering, easily compressed, often intermitting, and generally very frequent. It might be well here to add, that the cases which have exhibited the greatest and most frequent intermissions have generally had a slow pulse, as, for instance, numbering, in the case of A. B., a lad of twelve years of age, fifty, and a case of about forty years of age, thirty-nine in a minute.

But the general rule is that the pulse is frequent during the whole period, from the invasion of disease to convalescence, being seldom less than one hundred to a minute, and running up



to a number that one can hardly appreciate. It varies much also from day to day without any perceptible cause. For instance, in case of Miss L., a young lady of sixteen, who had, at the time to which I refer, been sick some four weeks; for several days the frequency of her pulse had diminished (though it had generally been from one hundred and twenty-five to one hundred and fifty) to one hundred and fifteen, one hundred and eight, one hundred and five, and so on, till at a count on the seventeenth of April it was ninety. The next day, without appreciable cause, so far as I could discover, it was very rapid, increasing in rapidity till evening; it was as high as one hundred and eighty-three to one hundred and eighty-five per minute, as ascertained by several accurate counts with the watch.

One lad of about six years old, who I was called to see, had been sick not more than six hours, was delirious, the pupil dilated, the pulse one hundred and eighty-two per minute.

As a further illustration, not only of the frequency but of the irregularity of the pulse, I will mention the count of the pulse of a lad seven years of age for seven successive days, two excepted: May 17, A. M., eighty per minute, and quite intermitting; 18th, P. M., one hundred and thirty, without intermissions; 19th, P. M., one hundred and twenty-four; 20th, when asleep, seventy-eight; awake, ninety; 21st, A. M., one hundred and sixty-two; 24th, after coughing, one hundred and sixty-three, when quiet a few less; 25th, one hundred and forty.

There is derangement of the stomach, not only during the first period of the disease, when the head is suffering so intensely, but during the later stages there are frequent retchings and occasional distressing vomitings, first ejecting such substances as have been taken into the stomach, followed with viscid and acid secretions.

There is another class of cases to which I propose here to refer, which evidently are produced by the same agency acting upon the system, but in which the brain and spinal marrow seem comparatively free, while the force of the disease is expended mainly upon the lungs. The brain may be somewhat

affected, as evinced by slight incoherence in talking, or the mind may be perfectly clear. The patient is attacked with the same malaise and chills, but thinks he has taken cold; has rather a frequent cough, at first dry, afterward raising a frothy mucus, which changes to a viscid and bloody expectoration; breathing very laborious, frequently numbering sixty inspirations in a minute. The patient calls the voluntary muscles in exercise, and complains that he "can't draw in his breath." The pulse is weak and slow, in the case of one adult to which my mind reverts, numbering less than forty per minute; in another more frequent, but so weak in the early period of the attack as to be scarcely perceptible. The remaining phenomena of the disease are similar to those already described. I have had many less of these cases than of those in which the nervous system was primarily implicated, but the fatality has been proportionably no less in the former than the latter kind of cases.

With this preliminary description I propose to give a few cases which have fallen under my observation, trusting in this manner to give a clearer perception of the malady, than by any prolonged description of the disease.

Case 1st.—A boy nine years of age; called to see him Jan. 8, 1857, 9 o'clock A. M.; learned from family that he came from school the previous day complaining of a severe headache and chills; was taken with vomiting in the evening, which continued intermittently all night; very restless through the night, and "crazy." Supposing it an attack from worms, they had been giving him various domestic remedies with reference to that during the night. When I first saw him he lay in scarcely a conscious state; the pupil of the eye dilated; head drawn back moderately; seemed to recognize no one, or to observe transpiring objects; the pulse was somewhat slower than natural; skin dry but not hot; he so much resembled a person having had concussion of the brain, that I directed my enquiries with reference to that accident; learned by some school boys that the previous P. M. he had been pushed over and fell backwards upon the ice.

I ordered warmth to the feet and epigastrium; applied a blister to the neck and gave 12 grs. of calomel; at 12 M. a liberal



dose of salts and senna, and during the P. M. two additional doses of the same. He seemed to notice nothing, but readily swallowed what was put into his mouth.

Called again at 8 o'clock P. M.; he recognized me at once; pupils less dilated; perspiration upon the surface; the blister had drawn well and the cathartic had acted upon the bowels. Attributing the whole matter to a concussion, and anticipating a speedy recovery, I gave an anodyne, and perhaps a placebo, and left.

Was called again at 2 o'clock at night; learned that he was taken worse about 10 P. M.; had been sleeping very heavy; I repaired to the house, and arrived just in time to see him die.

This was the first case of the kind falling under my observation, and at the time supposing it to arise from injury to the brain, did not look for petechiæ. If he had any, they were insufficient to attract common observation. Later reflection and observation led me to the firm conviction that this was a genuine case of "brain fever."

Case 2.—Mrs. T., a lady probably twenty-seven years of age, mother of a nursing child; not of very firm constitution; Feb. 16, Monday, was in her usual health; did the washing for her family; after which, at evening, got supper, and partook of a hearty meal. Soon after this she had chills, and complained of illness; adopted the common method of nursing for a cold, such as warm pedeluvia and a cup of hot ginger tea.

I was called to see her at 10½ o'clock the same evening; she complained of intense pain in the posterior part of the head and down the spine, manifesting a general restlessness; rational, but rather dull.

Continued external warmth, with cold applications to the head; gave calomel and morphine powders, to be followed by a liberal dose of senna and salts, in eight hours; next saw the patient at 3 o'clock P. M. of the succeeding day; there had been no motion of the bowels or urinary bladder; would swallow substances put in her mouth, but otherwise lay perfectly stupid.



Over the entire surface, from head to feet, were thickly scattered dark purple spots from two to eight lines in diameter; ordered ether, brandy and quinine. She died at 5½ o'clock, twenty-two hours from the attack.

Case 3d.—The next day, at 10 A. M., was called to see Mrs. F., a lady about sixty years of age. Was taken ill the previous evening. She had complained but little, except of chills and head-ache; and I believe had vomited some during the night. She lay in a torpid state, evidently swallowing liquids with difficulty; pulse feeble and frequent; unable to arouse her to understand anything. Ordered ether and brandy, for the feelings of the friends, for death's stamp was already upon her. She died before night.

Case 4th.—February 24th, 12 M., was called to see Mr. E. T.; about 30 years of age; not remarkably healthy at any time. Some three weeks before this he had a febrile attack, with pneumonic complications, for which I visited him eight or ten days, which readily yielded to appropriate treatment; he convalesced and was attending to his usual out-door labor. Not being a person of strict habits, some four days before this he had a liquor frolic, and the day previous to date, he labored in the rain nearly all the day. Was taken with chills the previous evening, with distressing cough and laborious breathing through the night and forenoon. As I went into the room, he lay upon a lounge, coughing occasionally, breathing rapidly, with great anxiety depicted upon the countenance. Placing my fingers upon the wrist, I was unable to discover a pulse. Changed the position of the arm, but still for several minutes could discover no pulsation whatever, and thought him actually dying. After a while, however, it was observable that by placing a finger very tightly over the radial artery, I was able to detect a very weak, almost imperceptible, unfrequent pulsation. His mind was unclouded; no pain in the head; in fact, he complained but little, except of the distressing breathing.

Administered expectorants, stimulants and tonics, with rubifacients and external warmth. Next day, (25th,) seemed to suf-

fer less; had some expectoration; more strength of pulse. Continued same treatment, with alteratives.

26th, 10 A. M.—Expression cadaverous; moderate perspiration; pulse weak, but stronger than when first seen. Learned that he was “flighty” during the night, but his mind was unaffected when awake. Breathing distressing; still he was able to walk across the room and sit awhile in his chair. Ordered brandy and quinine. He died 4 o’clock, P. M.

Case 5th.—Miss L——, a young miss of 13 years. Taken Jan. 17, in the afternoon, with chills—severe pain in the head, followed after a few hours with frequent vomitings. At first her friends attributed the trouble to a very hearty dinner, of which she had partaken on that day. First saw her Jan. 18th—pain in the head still severe, from temples to occiput, and down the spine; vomiting not now frequent. Administered calomel and ipic. every four hours, and mucil. sol. antim. intervening. Jan. 19, vomiting had entirely ceased; bowels moved during the night; remained in a semi-conscious state, but evidently enduring much suffering. Administered anodynes, alteratives and a nervine, producing more quietude. I must necessarily be somewhat indefinite in my dates, trusting to memory and the record of my daily prescriptions to fix the periods of changing symptoms in the case. During the first week from the attack, her sufferings were great, and anodynes had little effect in producing rest. About eight days from the attack she became deaf in the left ear, and perhaps three days later there was strabismus of the eye upon the same side; and not far from this time the pupils of her eyes were continually dilated. She, however, became more rational and quiet; perspiration appeared; the urine increased in quantity, and was paler in color; the tongue began to clean, and all her symptoms appeared favorable, except the derangement in the organs of vision. Her vision was double; and to illustrate the clearness of her perception, I will mention that I told her to “look at me,” and asked her how many doctors there were there. She said, “I see two, but I know there is but one.” She continued in this favorable way till the night of February 2, when I was summoned to see her.



She was stupid, scarcely swallowing liquid substances when put into her mouth—pulse difficult to count from its frequency. Gave her ether and brandy, with external warmth, and a blister to the neck. Revived after a few hours, but not as well as before that time. Lay in a torpid state, but had her senses when she could be aroused, which was somewhat difficult; and lingered, with occasional appearances of improvement and relapses, one calendar month from the attack, and died. It might be proper to remark that the strabismus ceased after a few days, the deafness was pretty much gone, and the eye had a much more nearly natural appearance. I did not observe any petechiæ upon the surface at any time.

Case 6.—March 27. Was called to see F. M., a lad six years of age, in the evening; was taken with chills that afternoon; skin very hot, restless and delirious; pupil dilated; pulse one hundred and eighty-two per minute; gave fifteen grains cal., followed with infus. senna. 28th, 10 A. M.—Cathartic had operated freely; he was rational; fever diminished; gave quinine, Dover's powder and sweet spts. nitre; at evening there was a return of the delirium, but not so severe as on the previous day; had some cough, with rapid breathing; gave syrup of squills and ipecac. 29th.—Much the same; continued the syrup, with Dover's powders and quinine. 30th.—Improving generally. 31st.—Convalescent.

Case 7.—Miss E. L., of Syracuse. Taken P. M. of March 21, with severe pain in the head, followed in the evening with chills and vomiting, which continued through the night; saw her first on the morning of 22d March; the only complaint she made, was of her head and spine; there was constant uneasiness and occasional vomiting; gave cal. and epecac, followed with infus. senna and salts, which produced free catharsis; ordered warmth to the feet, rubifacients externally, and fomentations of hops to the head. Monday, 23d.—Much more quiet, but torpid; pulse one hundred and forty per minute; petechiæ appeared over the surface, small in size, but exceedingly numerous, and of a dark purple hue; the powers of life seemed ready to succumb thus early to the disease; gave quinine and morphine, with stimu-

lants. Tuesday, 24th.—More quiet and rational, but mind inactive; symptoms generally promising better than yesterday.

This case continued under my care for seven weeks, apparently wavering between life and death. And it would be both tedious and unprofitable to detail the daily symptoms for that long time. In giving a general synopsis of her symptoms, I should say her constant complaint was, "Oh, my back!" She was evidently sensible, but scarcely noticed anything unless spoken to, and then replied in as few words as possible. Bowels exceedingly torpid. She lay motionless, unless turned by others. She was removed home, and still lives, but has never recovered. A sort of indifferent animal existence is preserved unto her; but she walks with difficulty, or with help. Her memory is gone, and her mind prostrated.

I have taken the liberty to give a cursory glance of so many cases, as I could not otherwise well show the various phases which the disease assumed. They are among the worst of a great number of cases of the same disease, selected not in the order they occurred, nor to show the treatment of these particular cases, nor yet to exhibit success or want of success in their management; for it is very evident with this list of cases that I should be utterly unable to say, what I heard a physician of Syracuse say, a few months since, that he "*had not lost a case of fever in twenty years' practice.*" Indeed, it struck me that the man who can say that, is a model physician, or else he has had model cases of fever to work upon! A multitude of milder cases have been treated, which partook of the same type, and mostly recovered, but it has been deemed unnecessary to refer to them.

To attempt to delineate the causes of this fearful disease, would be as difficult as that of any epidemic or epidemic disease; or to explain how it should prevail in my locality, and leave untouched the village and vicinity of Baldwinsville, but three miles to the westward, situated upon the same river, and with apparently the same causes existing to produce, would be equally difficult, and we therefore let it pass. It is proper however with reference to a general cause, to remark, that the weather was steadily and excessively cold; and it was observable as the



weather grew colder, new cases of the disease continually occurred, and as it became milder they diminished. Thus it fluctuated from time to time, and with approach of spring the disease nearly vanished.

With a few general remarks upon the treatment pursued with this disease, I shall close this already too long communication.

With such intolerable pain in the head, the first idea that would arise with reference to the treatment, would be the propriety of venesection, and the impression, *a priori*, would be in its favor. But an examination of the pulse would convince any one of its impropriety. While treating a case I often resolved that at the next opportunity I would try the remedy; but in no case was there a hard, or even a moderately full, but rather an exceedingly feeble and rapid pulse. In the case of a French girl, who had a constitution like a horse, and in which there was a commingling of hysteria, the remedy was tried with a favorable influence. But I found no other case in which I dared try the remedy on account of the tendency to rapid and fatal prostration in this disease.

Anodynes, even in large doses, in the early stage, seemed to increase the watchfulness; but after the first period had passed, and an evacuation from the bowels had been procured, they often quelled down that intense restlessness like a charm.

With reference to applications to the head, my rule was to allow the senses of the patient to dictate whether they should be cold or warm. I have seen cases in which the patients were almost insensible, but would reach and find a bowl of cold water, and apply of it to their own heads. To me this was sufficient evidence of the value of that remedy. But notwithstanding this evidence, a majority of cases not only were benefited by warmth to the inferior parts, but received ease by the application of warm fomentations to the head.

I therefore generally applied hops to get the benefit of the warmth, and perhaps somewhat of the anodyne principle contained in them.

When the brain and spinal system of nerves became, as it were, benumbed by a shock, much present benefit was derived from the application of *blisters*, to various parts at once, particularly upon the neck.

But the best remedy which I have found in the first stage of disease, when the patient was semi-delirious, and tossing with pain, seemingly agonized in every part of the system, is *calomel* in large doses. Many other cathartics were tried, and with them the bowels could generally be moved; but none produced the quieting effect of *calomel*. So much confidence did this remedy infuse into my mind, that I was certain when I could get an early and free discharge from the bowels with mercury, that there would be a truce if not a capitulation. When it failed to act upon the bowels, I became sure the patient would have a narrow chance, even if he did not fall into death's hands very soon.

From various extracts from the writings of authors, and from the confidence we have gained of its remedial powers in our malarious regions heretofore, my prepossessions were very strong in favor of *quinine*. Experience taught me, however, that the idea of interrupting this disease with quinine was utterly futile. There was often a lull in the severity of the symptoms twenty-four to forty-eight hours from the attack, antecedent to which time it was as useless as the same quantity of flour. But after the first stage, when there was still much restlessness and watching, it sometimes produced a perspiration and anodyne effect.

Here it was highly valuable; and still later in the disease, in smaller doses, it has some value as a tonic.

Cathartics are valuable in all stages of the disease; and *calomel* in particular. There is a remarkable inactivity of the bowels, and if left a few days, the patient becomes more stupid. A mercurial purgative carries off dark, offensive discharges, and the patient rouses under its influence.

I believe there is no specific for the disease, and particularly is this remark applicable after the first period of the disease has passed. The patient, if he survives this, and does not rapidly



recover, sinks into an indifferent state, and the physician's only business is to watch the progress of the disease, and treat symptoms as they arise. He will doubtless see many days in which he will be satisfied that the efforts of nature are doing as much for his patient without, as with his assistance; and finally, if any treatment is necessary in this stage of the disease, it is of the alterative, stimulative and tonic kind.

Thus, Mr. President and gentlemen of this Society, though young and inexperienced, in comparison with many I see before me, have I ventured to offer a few ideas respecting this fearful disease. For truly fearful is any disease which takes its victim from a state of perfect health, and baffling all the skill of physicians, and disregarding the sad wail of friends and the tears of helpless dependents, in less time than it takes the sun to shed its genial rays upon one circle of this sublunary ball, lays him silent in death. And doubly sad is it, that in some cases, from the first hour of the attack, the nervous system is so paralyzed, and the senses so benumbed that the patient is unable to give a parting salutation to the loved ones, ere he "takes his staff and travels on" to that land from whence there is no return. If the reading of this paper shall elicit instruction respecting this disease, from those members of our Society whose grey hairs betoken professional wisdom, its author will be abundantly compensated.

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